

REMARKS

Claims 1-6, 9-15 and 17-27 are pending and are presented for consideration.

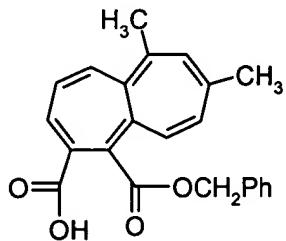
Applicants note with appreciation that the Advisory action mailed on April 22, 2003 indicated that entry of applicants' prior amendment would overcome most grounds of rejection. Since entry of applicants' prior amendment has been requested, applicants submit that those grounds of rejection have now been overcome and need not be further discussed.

Applicants note the statement in the Advisory action that the rejection of claim 9 under 33 USC § 112 remains, and also the examiner's helpful suggestion to overcome said rejection by replacing "matrix" by "carrier". Responsive thereto claim 9 has been amended by replacement of "matrix" by "carrier". Accordingly applicants submit that this ground of rejection has now been overcome.

Another version of the amended claim, showing the changes relative to the previous version, is appended. Additions are shown by underlining and deletions are shown by strikethrough. No other claims have been amended. No claims have been added.

The examiner rejected claims 17-26 under 35 U.S.C. § 102 as being anticipated by an article entitled "Formation of Cyclic ortho-Anhydrides of Heptalene-1,2-dicarboxylic Acids", by Weber et al. Helvetica Chimica Acta, Vol. 70, pp. 1439-1460 (1987) (D5), the examiner commenting that compound 11, (a steryl ester) seems to still be relevant. Applicants respectfully traverse this rejection, initially noting it is not clear what is meant by "a steryl ester".

Weber et al., Helvetica Chimica Acta 70 (1987) 1441 discloses a compound 11 represented by the following formula:



As can be seen from the formula, none of the substituents on compound 11 contains a substituent with an extended pi electron system. The examiner has agreed that carboxylate substituents do not

exhibit extended conjugation (citing the specification at page 26, lines 3-32), and compound 11 merely contains 2 methyl substituents and 2 carboxylate substituents, i.e. a carboxylic acid group and a benzyl ester group. Since none of the substituents on compound 11 contains a substituent with an extended pi electron system, and since claim 26, on which claims 17-24 depend, requires that "at least one of said substituents C<sup>1</sup> and C<sup>2</sup> [which are methyl groups in compound 11] contains an extended conjugated  $\pi$ -electron system which is in conjugation with the  $\pi$ -electron system of the heptalene core", applicants aver that Weber et al. (D5) neither teaches nor suggests the present invention.

Applicants note the examiner's disagreement with their interpretation of the phrase "an extended conjugated  $\pi$ -electron system which is in conjugation with the  $\pi$ -electron system of the heptalene core". They respectfully note all limits in a claim must be considered, i.e. "an extended conjugated  $\pi$ -electron system which is in conjugation with the  $\pi$ -electron system of the heptalene core" has a different meaning than "a conjugated  $\pi$ -electron system which is in conjugation with the  $\pi$ -electron system of the heptalene core" which could clearly embrace a single such conjugated moiety. Hence "an extended conjugated  $\pi$ -electron system which is in conjugation with the  $\pi$ -electron system of the heptalene core" must require more than one, i.e. 2 or more such conjugated moieties.

The examiner rejected claims 1-9, 11-14 and 25 under 35 U.S.C. 103 as being unpatentable over an abstract entitled "Synthesis of New Photo- and Thermochromic Systems Based on Cyclic Double Bond Shifts in Heptalenes" El Houar et al., Chimia vol. 50, pp. 341 (7/8-1996) (D2) in view of U.S. Pat. No. 5,438,561 (D9). Applicants respectfully traverse this rejection.

While applicants remain of the opinion that D2 does not provide sufficient information about the synthesis of **3** and **4**, there are additional considerations with regard to this reference. The reference merely describes a physical phenomenon, a shift in UV/VIS absorption arising from a double bond shift, giving rise to a new peak at 433 nm. This reference does not provide any information as to the possibility to use compounds **3** and **4** for data processing (cf. page 6, last paragraph of the present application).

D9 relates to a method for recording and reproducing information using an optical memory device being constituted by a transparent substrate, a recording film formed on the substrate and made of a resin containing a photochromic material dispersed therein, said photochromic material being capable

of reversibly changing its state ... and absorbing light of at least 780 nm. The substituted [4n]annulenes of D2 are not taught to absorb light of at least 780 nm. Furthermore, the conversion of compound 3 to 4 slowly reverts on standing at 25°, rebuilding 3, which mitigates against use in a memory device.

Specific examples of the photochromic material in D9 are diarylethene derivatives and nitrospiro-thiopyrans, which are quite dissimilar to compounds 3 and 4. Neither D9 nor D2 contains any hint that substituted [4n]annulenes can be used in a method for information storage and data processing. Hence there would have been no motivation to combine the references as urged by the examiner. Applicants request that the examiner reconsider and withdraw the obviousness rejection of claims 1-9, 11-14 and 25 in view of D2 and D9.

The Examiner rejected claims 1-9, 12 and 25 under 35 U.S.C. 103 (a) as being unpatentable over D2 in view of U.S. Pat. No. 5,432,873 (D10). D2 has been discussed. D10 is cited as showing the use of photochromic compounds in optical switches. The Examiner alleges that it would have been obvious to use the photochromic compounds shown in D2 in optical switches. Applicants respectfully traverse this rejection.

D10 relates to an optical switch in which a compound including a photochromic material is placed between two optical waveguides. According to D10 examples of photochromic materials are derivatives of fulgide, anthracene, azobzene, hydrazine, oxazone, diarylethene, salicylaldehyde, spiropyran, biimidazolyl and cyclophan (see D10, column 6, line 18 to 21). According to D10, column 5, line 61 to column 6, line 21 the photochromic material must meet specific conditions to be suitable for the optical switch according to D10. That is, not any photochromic material is suitable for information storage and data processing. Consequently, D10 does not teach or suggest the use of substituted [4n]annulenes in a method for information storage and data processing. D2 is distinguished for the same reasons given above. Hence there would have been no motivation to combine the references as urged by the examiner. Applicants therefore request that the examiner reconsider and withdraw the obviousness rejection of claims 1-9, 12 and 25 in view of D2 and D10.

The examiner has rejected claims 1-15 (now 1-6 and 9-15) and 25 under 35 U.S.C. 103 (a) as being unpatentable over D2 in view of D9 or D10 with an extract from "The Applications of Holography", by H.J. Caulfield et al. (D11). D11 is cited as showing that photochromic holography media are conventional or well-known. The examiner alleges that it would have been obvious to use the

photochromic compounds shown in D2 in holographic media. Applicants respectfully traverse this rejection.

D11 contains a general disclosure that various recording media, including photochromic materials, have been used for holographic recording. However, no specific photochromic materials are mentioned in D11. Therefore, D11 does not teach the use of substituted [4n]annulenes in a method for information storage and data processing. D2, D9 and D10 are distinguished for the same reasons given above. Hence there would have been no motivation to combine the references as urged by the examiner. Applicants request that the examiner reconsider and withdraw the obviousness rejection of claims 1-6, 9-15 and 25 over D2 in view of D9 or D10 and D11.

Since there are no other grounds of objection or rejection, passage of this application to issue with claims 1-6, 9-15 and 17-27 is earnestly solicited.

Applicants submit that the present application is in condition for allowance. In the event that minor amendments will further prosecution, applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



Ciba Specialty Chemicals Corporation  
540 White Plains Road  
Tarrytown, New York 10591  
(914) 785-7127

Kevin T. Mansfield  
Agent for Applicants  
Reg. No. 31,635

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Marked-up Version of Amended Claim 9

9. (twice amended) Method according to claim 1, wherein the carrier matrix comprises a low-melting glass or polycarbonates, polyacetates, methacrylates, styrenes and copolymers thereof, as well as copolymers with polymerisable [4n]-annulenes.